

ABSTRACT OF THE DISCLOSURE

A steerable phased array antenna has a plurality of antenna elements each having an associated phase-shifter. The phase-shifters have actuators which change shape in response to electrical signals and in so doing cause either a path length of signals to be radiated from the antenna elements to change or a propagation constant of a transmitting medium to change, thereby introducing phase shift into the respective signal. The actuators comprise tubular stator of piezoelectric or magnetostrictive material; a piston coaxially disposed within the stator and a bearing member disposed between the stator and piston which are configured such that the stator distorts in an approximately frusto-conical manner in response to the control signal, thereby causing the bearing member to roll axially along the stator and the movement of the bearing member in turn causing axial movement of the piston.

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